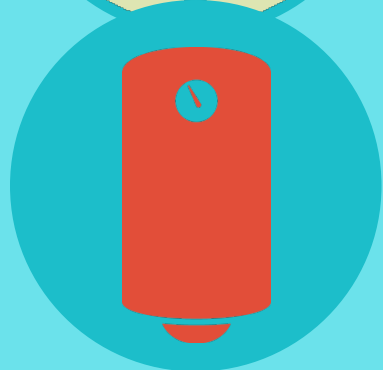
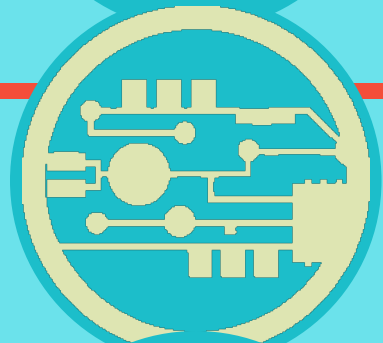




**FEB 6, 2019**  
Momentum Savings Call





# 2018 Retrospective & 2019 Outlook





**JESSICA**

AIONA

# Non-Residential Lighting



2018

## 2018 accomplishments:

- Attended Light Fair
- Interviewed market actors
- Collected sales data
- Began model update

## What we learned:

- TLED sales are slowing with a decrease of 9% between 2016 and 2017
- Schools and manufacturing end users are on the slower end of lighting retrofits compared to retail and car dealerships on the faster
- Program savings have been their highest in 2016 and 2017

# Non-Residential Lighting



2019

## 2019 activities:

- Complete model update & share results
- Attend Light Fair
- Collect sales data

## What we hope to learn:

- Magnitude of momentum savings for 2016-2017
- Forecasted change in energy consumption 2016-2021
- Do markets think LED adoption is being too slow?

# Outdoor Lighting Stock Assessment



2018

## 2018 accomplishments:

- Finalized study scope and boundaries
- Developed virtual catalog of NW outdoor lighting sites
- Coordinated with NEEA/CBSA

## What we learned:

- Our focus will primarily be on manufacturing and industrial sites, parks and open spaces, street lighting, parking and residential common areas
- Initial analysis shows 60% of streetlights are LED and 40% are HID
- The devil is in the details

# Outdoor Lighting Stock Assessment



2019

## 2019 activities:

- Pilot site visits
- Refine approach based on pilot
- Implement full-scale study & complete site visits

## What we hope to learn:

- Number of street lights in the NW
- Efficiency mix & technology mix of outdoor lighting in NW
- How prevalent *really* are LEDs in parking lots?



# Data Centers



2018

## 2018 accomplishments:

- Summarized market actor interview findings
- Defined next steps for quantifying momentum savings

## What we learned:

- There is limited information on how data centers are adopting EE practices
- The average data center has a PUE of ~1.8
- Sources predict an annual growth in data center loads of more than 10% for the next five years

# Data Centers



2019

## 2019 activities:

- Data center manager interviews
- Determine next steps for building model method

## What we hope to learn:

- What % of servers are virtualized
- Are EE practices being adopted in NW?
- Do small embedded data centers adopt different EE practices than larger scale stand-alone data centers?



**BONNIE**

WATSON



# Residential HVAC



2018

## 2018 accomplishments:

- Built momentum savings model
- Characterized the smart thermostat market
- Collected 2016-2017 sales data (NEEA led project)
- Attended AHR expo

## What we learned:

- How to model HVAC energy consumption (and how it changes over time) in a way that actually works (!!!!)
- “Advanced smart” thermostats are where it’s at

# Residential HVAC



2019

## 2019 activities:

- Finalize model and share results
- Collect 2018 sales data (NEEA)
- Attend AHR Expo
- Begin exploring commercial HVAC

## What we hope to learn:

- Magnitude of momentum savings for 2016-2017
- Forecasted change in energy consumption 2016-2021
- Where there is potential for momentum savings in commercial HVAC

# Residential Hot Water



2018

## 2018 accomplishments:

- Began building momentum savings model
- Deep dive into RBSA I vs. II water savings measure data

## What we learned:

- There is still potential for hot water use momentum savings
- The importance of hot water *system* design
- How national hot water use is changing over time

# Residential Hot Water



2019

## 2019 activities:

- Finalize model and share results
- Attend kitchen and bath trade show
- Complete market characterization

## What we hope to learn:

- Magnitude of momentum savings for 2016-2017
- Forecasted change in energy consumption 2016-2021
- Understand the supply chain and corroborate model assumptions

# Other things we're working on

- Heat pump baseline field study
- Market scan
- Engagement in regional stock assessments
- RTF Market Analysis subcommittee review

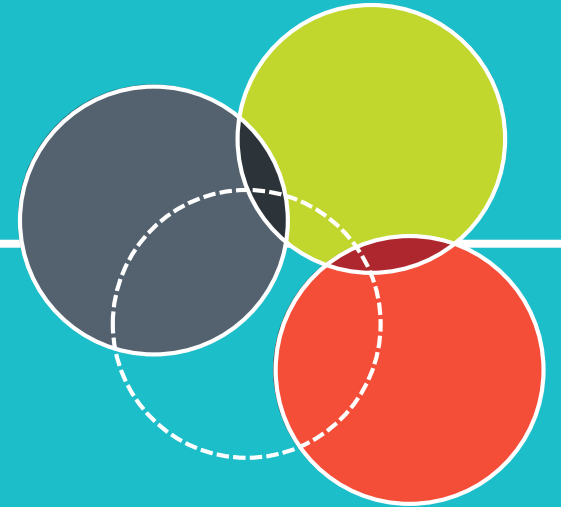


**See you May 1, 9-10am!**

[www.bpa.gov/EE/Utility/  
Momentum-Savings/Pages/Calls.aspx](http://www.bpa.gov/EE/Utility/Momentum-Savings/Pages/Calls.aspx)

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Bonneville  
POWER ADMINISTRATION

